

**REMARKS**

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated November 25, 2003 (U.S. Patent Office Paper No. 9). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

**Status of the Claims**

As outlined above, claim 4 is canceled without prejudice or disclaimer and claims 1-3, 5, 7-11, 13, 14 and 15 are being amended to correct formal errors and to more particularly point out and distinctly claim the subject invention.

**Additional Amendments**

The specification and drawings are being amended to correct formal errors and to better disclose and describe the features of the present invention as claimed. Applicant hereby submits that no new matter is being introduced into the application through the submission of this response.

**Formal Objections or Rejections**

Claims 8 and 9 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite. In particular, the Examiner alleges that the feature "the main arm member" recited by claims 8 and 9 lacks antecedent basis in the claims.

Applicant has amended claims 8 and 9 to change their dependency from claim 1 to claim 7, that recites "a main arm member". Applicant respectfully submits that as now recited, all features of claims 8 and 9 possess sufficient antecedent basis in the claims.

Claims 13 and 14 were objected to under 37 C.F.R. §1.75(c) for being of improper dependent form and for failing to further limit the subject matter of a previous claim. Applicant respectfully traverses the rejection.

Applicant respectfully submits that claims 13 and 14 further define features of the pickup apparatus for a piano as recited in claim 1. The stationary member of claim 1 is further limited in claim 13 to when it is formed as at least one of a cast-iron plate, a pin block or other brace, an inner rim, an outer rim and a back post of the vertical piano body. The sound source member of claim 1 is further limited in claim 14 as being formed by as at least one sound board, a rib adhered to the sound board, a bridge adhered to the sound board, a bridge pin provided on the bridge adhered to the sound board, and a string adhered to the sound board and strung such as to be in contact with the bridge. Applicant respectfully submits that claims 13 and 14 properly further limit the subject matter of claim 1.

#### Prior Art Rejections

Claims 1, 3 to 7, and 10 to 15, were rejected under 35 U.S.C. §103(a) as being unpatentable over Izdebski *et al.*, U.S. Patent No. 4,290,331 (further, Izdebski '331) in view of Applicant's Admitted Prior Art (further, AAPA).

Applicant respectfully traverses the rejection and submits that amended claim 1 recites a pickup apparatus of a piano, comprising a sensor member and a length-adjusting mechanism having first and a second contact members, wherein the first contact member engages a stationary member, the second contact member engages a sound source member, the stationary member is a cast-iron plate of a piano body, the sound source member is a sound board of the piano body, the sensor member is operatively connected to the length-adjusting mechanism, and the length-adjusting mechanism is formed to adjust a quality of the output of the sound source member to the sensor member by adjustably applying a vibration restraining force applied in response to a length of the length-adjusting mechanism. In essence, the pickup apparatus of the present invention is a force mode pickup.

An important feature of the present invention relates to how the pickup apparatus for a piano operates. In the present invention, the pickup apparatus restrains the vibration received from a sound source member. The vibration is conveyed through the contacts of the pickup apparatus. The structure of the pickup apparatus in restraining the vibration induces a counteraction force in the pickup apparatus. That counteraction force is applied to the sensor.

With respect to Izdebski '331 the Examiner alleged in the Office Action on pages 5 and 6 that col. 1, lines 52 to 60, col. 1, lines 67-68 and col. 2, lines 1 to 12 of Izdebski '331 show a pick-up device for an instrument that renders obvious the pickup apparatus of a piano

of claim 1. However, the Examiner conceded on page 6 of the Office Action that Izdebski '331 does not disclose the device being a pickup apparatus of a piano and a first contact member which is in contact with a stationary member. Therefore, Izdebski '331 by itself does not disclose, teach, or suggest a pickup apparatus of a piano, as now recited in claim 1.

The Examiner further alleged in the Office Action, on page 6, in the last paragraph that AAPA cures the deficiencies of Izdebski '331 by disclosing on page 2, lines 24 to 27 a device that reads on "a first contact member which is in contact with a stationary member". The Examiner alleged that it would have been obvious for a person skilled in the art to modify the pick-up device of Izdebski '331 with the device from the AAPA to cure the deficiencies of Izdebski '331 and to use the resulting device as a pickup apparatus for a piano.

The position of the Examiner as to the disclosure of Izdebski '331 and as to the AAPA curing the deficiencies of Izdebski '331 is respectfully traversed.

As to the disclosure of Izdebski '331, Applicant respectfully submits that it is directed to an acceleration pickup provided in a housing. An acceleration pickup comprises a base mounted on a vibrating object, the vibrating object being coupled with a piezo-element that facilitates transferring the vibration. The base is attached with a screw to couple a seismic mass and the piezo-electric element. The vibrating object, the seismic mass and the piezo-electric element vibrate integrally. The force F applied to the piezo element is proportional with the mass m of the seismic mass and with the vibration acceleration a ( $F=m \times a$ ). The piezo electric element outputs an electric charge directly proportional with the force F.

The acceleration pickup of Izdebski '331 is comprised of bridge 5, housing 8, and wooden coupling – post 11, which are integrally structured and operate as explained above. Screw 12 serves both functions as a seismic mass and a screw. The piezo-electric element is crystal 9 of Izdebski '331. The acceleration pick-up of Izdebski '331 is preferably mounted on the bridge of a guitar or on a musical instrument. (See col. 1, line. 32). Wooden post 11 contacts a part of a musical instrument with the bottom surface.

Applicant respectfully submits that Izdebski '331, as shown above, fails to disclose, teach or suggest a pickup apparatus mounted between a stationary member and a sound source member of a piano; a sound source member that actively vibrates to produce a sound while the stationary member supports and affixes the sound source member and its not vibrating; a stationary member that would include the following parts of a piano: a brace, a

cast iron plate, and a structure used to actively restrain the vibration of the sound source member, all as taught by the present invention.

Rather, Izdebski '331 discloses about the source of the electrical signal that the crystal 9 includes a pair of electrodes coupled to leads for carrying an electrical signal representative of the vibrations of the piezo-electric crystal 9. The electrical signal corresponding to the vibrations of the piezo-electric crystal is obtained with the help of a transducer mounted on a bridge of a stringed musical instrument that converts the vibration of said bridge into corresponding electrical signals. (See col. 2, lines 5 to 12)

In addition to all the above, Applicant would point out that there is an important difference in the nature and the quality of sound outputted by the device of Izdebski '331 as compared to the pickup apparatus of the present invention. Izdebski's acceleration pickup outputs sound of poor frequency characteristic and a particular frequency band would be either gained or reduced by that device. In contrast, the pickup apparatus of the present invention is not designed to pick up a particular resonance sound and has excellent frequency characteristics.

Applicant respectfully submits that Izdebski '331, as shown above, fails to disclose, teach or suggest the generating the electrical signal for output of the present invention, as it is recited by claim 1: "said sensor member being operatively connected to said length-adjusting mechanism and said length-adjusting mechanism is formed to adjust a quality of the output of said sound source member to said sensor member by adjustably applying a vibration restraining force applied in response to a length of said length-adjusting mechanism."

Even more, neither the primary reference of Izdebski '331 nor the secondary reference of AAPA provide any disclosure or teaching that would motivate the application of the '331 structure to a piano. Also, neither reference provides any motivation for their combination so as to embody all the elements of the present invention as now claimed.

In view of the foregoing, Applicant respectfully submits that along with the above described deficiencies in the applied references conceded by the Examiner in the Office Action, the combination of Izdebski '331 and AAPA still fails to disclose, teach or suggest all the features of the present invention, as now recited in amended claim 1.

Claims 3, 5 to 7, and 10 to 15 are dependent from and add features to claim 1 discussed above. In view of the above arguments, Applicant contends that the claims are allowable for at least the same reasons as those applicable to claim 1 and for reasons contained therein.

Therefore, claims 1 - 3, 5 to 7 and 10 to 15 are not rendered obvious under 35 U.S.C. §103(a) by the combination of Izdebski '331 and AAPA. Withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 3, 5 to 7 and 10 to 15 is respectfully requested.

Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Izdebski *et al.*, U.S. Patent No. 4,290,331 (further, Izdebski '331) in view of Applicant's Admitted Prior Art (further, AAPA). Applicant respectfully traverses the rejection.

Claim 2 depends from and adds features to independent claim 1. Claim 1 as discussed above is allowable over Izdebski '331 and AAPA. Based on the above, Applicant respectfully submits that claim 2 is allowable over the above cited references.

Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Izdebski *et al.*, U.S. Patent No. 4,290,331 (further, Izdebski '331) in view of Applicant's Admitted Prior Art (further, AAPA) as applied above and in further view of Johnson, U.S. Patent No. 4,022,100 (further, Johnson '100). Applicant respectfully traverses the rejection.

The Examiner further alleged in the Office Action on page 11 that Johnson '100 cures the deficiencies of Izdebski '331 and of AAPA by disclosing a fastener for a hollow wall that includes rotatable arms connected to a main plate that are used to secure the overall device to the wall. The Examiner alleges that the disclosure of FIGs. 1 to 5 and col. 2, lines 57-61 of Johnson '100 cures the deficiencies of the primary and secondary references. The Examiner further alleged that it would have been obvious to one of ordinary skill in the art to use the fastener of Johnson '100 to secure the pickup device of Izdebski '331 to a piano.

The position of the Examiner as to the disclosure of Johnson '100 curing the deficiencies of Izdebski '331 and of AAPA is respectfully traversed. As to the disclosure of Izdebski '331 and AAPA Applicant respectfully submits that the same arguments made above in response to the rejection of claims 1 and 7 apply. As described above, Izdebski '331 and AAPA individually or in combination fail to disclose several features of claim 1. The combination of Johnson '100 with Izdebski '331 and AAPA still fails to disclose, teach or suggest the features of claim 1 "said sensor member being operatively connected to said

length-adjusting mechanism and said length-adjusting mechanism is formed to adjust a quality of the output of said sound source member to said sensor member by adjustably applying a vibration restraining force applied in response to a length of said length-adjusting mechanism". Claims 8 and 9 depend from and add features to allowable claim 1. Therefore, claims 8 and 9 are allowable over Izdebski '331 in view of AAPA in further view of Johnson '100 at least for the reasons expressed above in connection with the rejection regarding claim 1.

In view of the foregoing, Applicant respectfully submits that along with the above described deficiencies in the applied references conceded by the Examiner in the Office Action, the combination of Izdebski '331, AAPA and Johnson '100 fails to disclose, teach or suggest all the features of the present invention, as now recited in amended claims 8 and 9.

### CONCLUSION

In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to

contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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